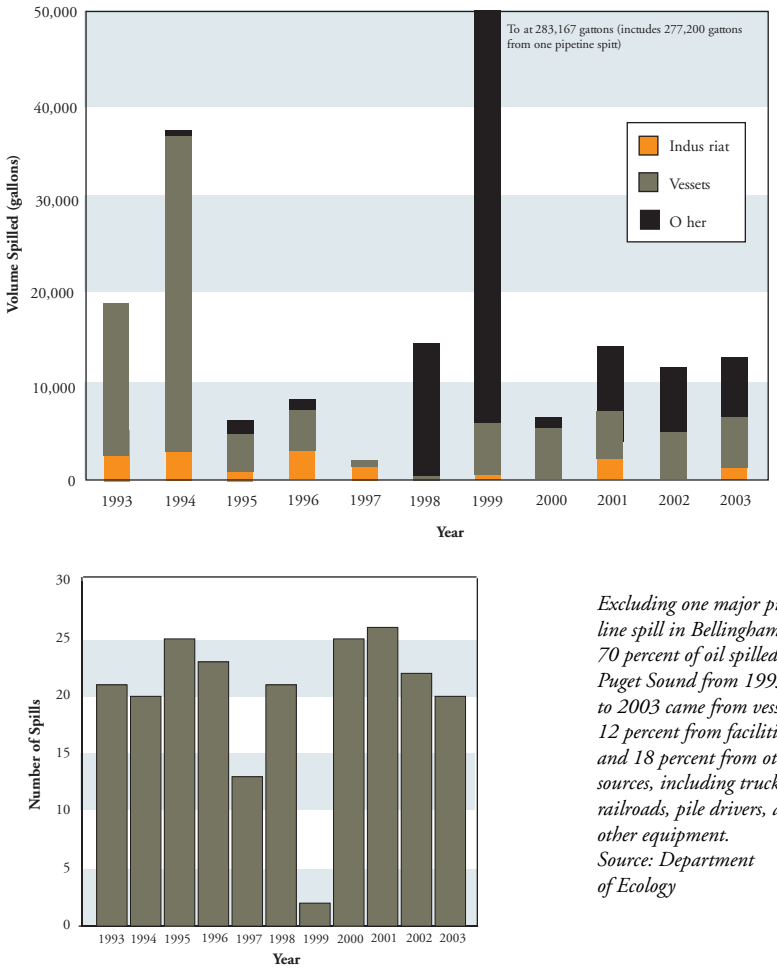
- The agency screens more than 2,600 cargo and passenger vessels each year to promote safe operation and maintenance.

- In response to the Point Wells spill, the 2004 Legislature passed a bill aiming for zero oil spills. The law directed Ecology to provide recommendations for safer oil-transfer rules by the end of 2004, and by 2006, guidelines for the use of containment booms during oil transfers.

- The University of Washington Sea Grant program (Sea Grant) educates boat owners about preventing oil spills. In 2003 and 2004, Sea Grant held five workshops for U.S. Coast Guard Auxiliary personnel, explored ways to adopt spill prevention standards in marinas, educated commercial fishing boat operators, distributed hundreds of spill prevention kits, and placed spill prevention tips in the Marine Yellow Pages, a directory used by vessel operators and marine industry representatives.

Numbers and Volumes of Oil Spills from Vessels, Facilities, and Other Sources, 1993-2003



Excluding one major pipeline spill in Bellingham, 70 percent of oil spilled to Puget Sound from 1993 to 2003 came from vessels, 12 percent from facilities, and 18 percent from other sources, including trucks, railroads, pile drivers, and other equipment.
Source: Department of Ecology

B. NUTRIENTS AND PATHOGENS

Toxic contaminants aren't the only pollutants threatening Puget Sound marine life. Nutrients and pathogens also take their toll. Nutrients, such as nitrogen and phosphorus, are essential for life, but when too many of them are released into aquatic ecosystems, they stimulate algae growth. When algae die and settle to the bottom to decay, they deplete the oxygen in the water. Organic matter high in carbon can also pull oxygen from the water.

Sources of nutrients in Puget Sound include treated and untreated waste from onsite sewage systems and sewage treatment plants, discharges from boaters and other recreational activities, waste from farm animals and pets, fertilizers, stormwater runoff, and wood waste.

The problem of low dissolved oxygen plagues water bodies throughout the world and is now a critical concern in Puget Sound. Marine organisms living in low-oxygen zones become stressed, are driven out of their habitat, or die. Nutrients from human activities can lead to low levels of dissolved oxygen in sensitive areas. Some of those sensitive areas are in parts of the Sound that do not exchange water with the open ocean frequently. This contributes to the low levels of dissolved oxygen in Hood Canal, Penn Cove, and Budd Inlet.

Bacteria, viruses, and other disease-causing microbes or pathogens come from human and animal waste. Poorly functioning septic systems are a common source of pathogens in Puget Sound. Pathogens on polluted beaches can make people sick where people harvest shellfish or swim. Ecology, DOH, and local health districts issued 12 advisories in 2003 and 2004 because of bacterial pollution on Puget Sound beaches.

INDICATOR: Safe, Edible Shellfish

Clean water is the lifeblood of shellfish in Puget Sound. They filter large quantities of water as they feed and can also accumulate bacteria, viruses, and other contaminants. Safe, edible clams, oysters, and other bivalve shellfish are evidence of good water quality. Contaminated shellfish reflect water quality problems and can harm the people and animals that eat them.

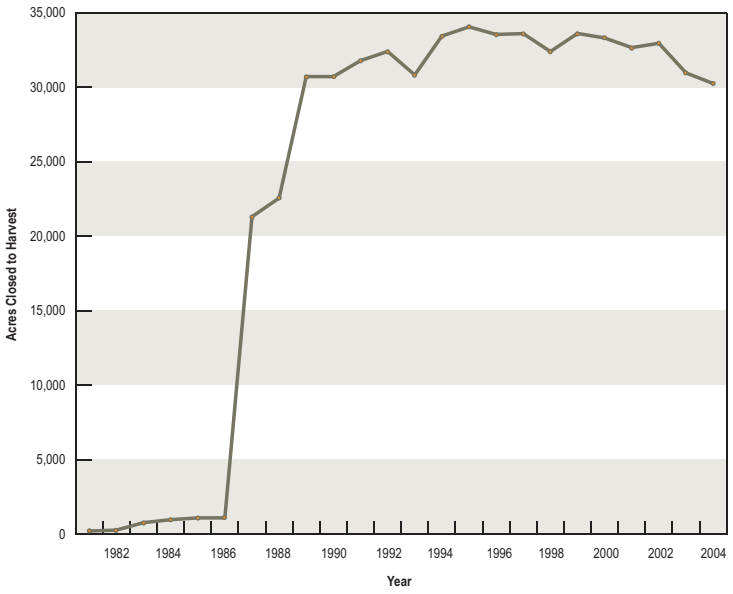
Status

In 2004, DOH approved or conditionally approved nearly 135,000 acres of commercial shellfish growing areas for harvest. In 2003 and 2004, a net gain of 1,655 shellfish growing acres is testimony to the hard work of the businesses, agencies, and citizen groups that have fought to clean up pollution and keep beds open in Puget Sound.

Trend

- From 1995 to mid-2004, DOH reclassifications of shellfish growing areas resulted in the downgrade of about 4,600 acres and the upgrade of nearly 12,400 acres, for a net upgrade of more than 7,800 acres.
- However, the list of shellfish growing areas threatened with closure due to pollution has grown from nine sites in 1997 to 18 sites in 2004.
- Since 1980, DOH downgraded nearly 20 percent (30,000 acres) of the area once available for commercial shellfish harvest in Puget Sound, because of bacterial contamination.

Commercial Shellfish Growing Areas Closed to Harvest in Puget Sound Since 1980



Since 1980, 30,000 acres of commercial shellfish growing areas have been closed to harvest because of pollution. Most of these closures occurred more than a decade ago. In recent years, the commercial acreage open for harvest has remained fairly steady. Source: Department of Health

Classification of Shellfish Growing Areas

DOH monitors and classifies commercial shellfish growing areas to ensure shellfish are safe to eat and to detect pollution threats before they are severe enough to close beds.

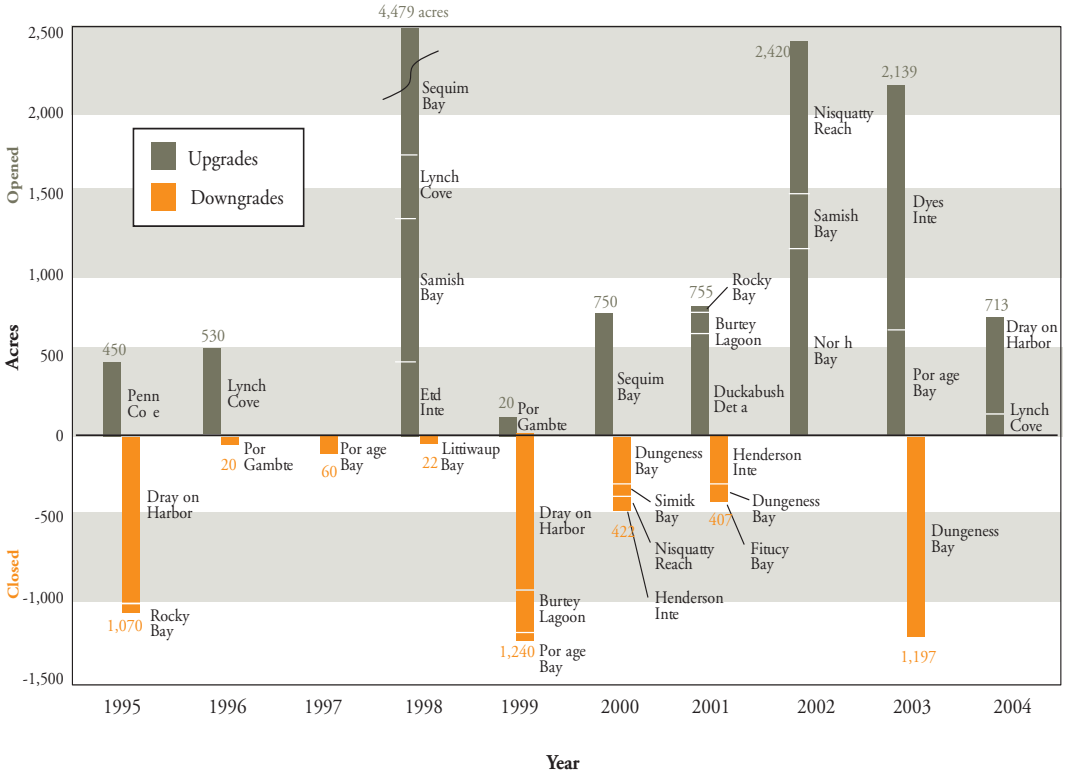
Approved: No restrictions are placed on harvest due to contamination or sanitary conditions.

Conditionally Approved: Shellfish can be harvested and marketed only during prescribed periods. For example, a growing area may be approved during dry weather, but temporarily closed after rainfall.

Restricted: Shellfish cannot be marketed directly due to contamination. Shellfish can be moved to clean waters for a period of time to flush contaminants prior to harvest and marketing.

Prohibited: Shellfish cannot be harvested due to contamination that poses a health risk to consumers.

Puget Sound Commercial Shellfish Reclassifications Due to Sanitar Conditions



Between 1995 and 2004, 12,400 acres of commercial shellfish areas have been upgraded and 4,600 acres have been downgraded, resulting in a net upgrade of 7,800 acres since 1995. Source: Department of Health